ferent in shape and structure—Meig's Pasture is delimited by a series of low shell piles and pit features with an opening to the north or northwest, while Buck Bayou is a mounded, semicircular shell midden with an opening to the southwest. Buck Bayou rises to a height of nearly 2 meters above the surrounding landscape, while the highest topography associated with the shell deposits at Meig's Pasture are often at ground level. Nonetheless, Meig's Pasture does have shell deposits exceeding a meter in height. In shape, the sites, although semicircular, seem much less regular than most rings on the Atlantic coast.

Meig's Pasture seems the older site at around 3900 B.P., but both sites are marked by a lack of ceramic pottery (except near the surface at Buck Bayou [Thomas and Campbell 1991:116]) and the presence of baked clay objects. The sites also have lithic tools, both chipped stone and ground stone including steatite, and other exotics that distinguish them. How common these items are is unclear (cf. Curren 1987:74; Thomas and Campbell 1991:108, 112). The same may be said of bone pins and shell beads and tools which are from industries termed "moderately active" at Elliott's Point sites in the region, but whose abundance at Buck Bayou is not stated in published accounts (Thomas and Campbell 1991:108). Shell species found at these sites include oyster and quahog, species commonly found in shell rings on the Atlantic coast, but also bay scallop and rangia.

- ***South Florida***

On the southwest Florida coast one or possibly two distinct and unnamed cultures produced shell rings at Horr's Island and Bonita Bay between 4400 and 4100 B.P. (Dickel 1992; Houck 1996; Russo 1991, 1994). Aside from the rings in Mississippi, these are geographically the most distant from Guana. Both Horr's Island and Bonita Bay shell rings' associations with sand/shell ceremonial mounds, their greater size, and their elongated U shapes (150 and 240 meters in length, respectively) distinguish them from the more circular rings of Georgia and South Carolina. Shell depths up to 1 meter have been identified at Bonita Bay, while depths up to 4 meters are found at the Horr's Island ring. The great depths at Horr's Island are located on the side of the high sand dune upon which the ring was built. The ring actually rises little more than two meters above the central plaza, while at Bonita Bay, the ring rises at its greatest height, little more than a meter above the plaza.

The Bonita Bay ring has been interpreted as both a habitation site and ceremonial site (Dickel 1992:160). As evidenced by shell debris at the base of the ring, the site has been suggested to have been occupied prior to large scale "heaping" of shell to form the ring (Dickel 1992:161). Where houses may have been placed and ceremonies occurred are questions that have not been addressed (Dickel 1992:162; Houck 1996:32). The shell ring at Horr's Island has been viewed as the remains of habitation activity, containing not only shell and bone refuse, but ash deposits representing either in situ hearths, or dumps from hearths lying elsewhere at the site. The plaza surrounded by the ridge has yielded numerous posts suggestive of frail timber and thatch structures about 3 meters in diameter, stone lined hearths, and large amounts of food debris including shell and bone. The further into the center of the plaza, less evidence of habitation is found until a near sterile sand area is encountered (Russo 1991:148–150). Ceremonial feasting as well as communal food processing activities have been suggested to have occurred at the site (Russo 1991:150, 497).

Across the peninsula, some 120 miles to the northeast of Horr's Island the Joseph Reed Shell Ring lies on the Atlantic Beach. This ring has been significantly impacted by coastal erosion. Formerly circular in shape, it is now only half its former size, but still extends 250 meters across from north to south with variable thicknesses of shell up to 2 meters in depth. The site has been interpreted as a ceremonial center/village where large and small scale feasts were held. Evidence of both large and small scale feasts of oyster and fish have been identified in the ring. Radiocarbon dates range between 3500 and 2800 B.P. (Russo and Heide 2002).

All three South Florida rings have yielded sandstone and/or limestone artifacts and bone pins, although in small numbers. The absence of pot-

tery and the presence of shell tools at Bonita Bay and Horr's Island distinguish them from Joseph Reed. In southwest Florida pottery was not widely adopted until 2500 B.P. The pottery at Joseph Reed is unusual for Archaic shell rings. It consists of two types, St. Johns and Glades Plain, thought not to have been adopted anywhere else in Florida until 2500 B.P. at the earliest. It is not abundant, averaging 0.4 pieces per 25,000 cubic centimeters of shell. Although Horr's Island has yielded abundant shell tools (e.g., adzes, columella hammers), such abundance is not found at the other two rings, due perhaps to smaller-scale excavations.

- ***Northeast Florida***

Including Guana, three Late Archaic shell rings have been identified amid the estuaries of Northeast Florida. The circular Oxeye shell ring is the oldest, radiocarbon dated to 4500 B.P. Much of the site lies below current saltwater marsh. Not only have rising sea levels buried the eastern portion of the ring, but storms and daily tides have dispersed the shell and lowered the former topography considerably. Today the dispersed shell with a central plaza area with no shell has an outside diameter of 150 meters, but prior to disturbance, the ring may have been as small as 100 meters in diameter. Portions of the western half of the circle are still visible above the marsh. The thickest shell deposits there are a little over two meters (Russo and Saunders 1999).

A couple miles east of Oxeye and 30 miles north of Guana lies the Rollins Shell Ring. The ring is generally circular to horseshoe shaped with an opening on the south/southeast side. The main ring measures at its greatest exterior diameter 150 meters. However, a number of smaller rings are attached to it, and when these are included, shell deposits related to the ring extend up to 250 meters across. The eastern side of the ring barely rises above a meter, while the western portion contains shell deposits in excess of 4 meters above the central plaza. Both Rollins and Oxeye have been suggested to have functioned as places of ceremony and feasting, with the permanency of occupation open to question. Rollins was definitely occupied, at least in a number of seasons, if not year-round. The plazas served as arenas for ceremony, while the higher shell ring served both as display of a sub-group's collecting abilities and as areas associated with habitation (Russo and Saunders 1999).

Oxeye does not contain pottery, having been constructed a few hundred years before pottery was adopted in the region. However, the societies that built the ring were aware of ceramic technology. People at the site cooked with clay balls. Other than these, however, no artifacts have been recovered other than a few lithic flakes. In contrast, nearly a thousand years later fiber-tempered ceramics had been widely adopted in the region. At the Rollins site around 3700 to 3500 B.P. both incised and plain ceramics were commonly used (Russo and Saunders 1999; Saunders n.d.). Bone pins are fairly common in the assemblage, but finished lithic tools and other exotic artifacts rare.

- ***Guana Shell Ring***

The shape and age of the shell ring at Guana suggest that the Guana Shell Ring builders were connected, either historically or functionally, to other ring-building cultures in the Southeast. However, characteristics of the Guana Shell Ring most closely align with those of the Rollins Shell Ring. To begin with, both rings date to the same period, contain similar Orange pottery, and are situated more closely to each other than to any other contemporary ring site. But it is the shape, size, and general orientation of the rings that are most similar. Both rings are C- to U-shaped, have their highest shell deposits on their western and northern sides, have a relatively flat but gradually sloping plaza about 125 across east to west, and have an opening in the ring on the south/southeast side which is about 100 meters across. This orientation is unlike any other of the mapped rings (Figure 12).

Differences do exist between the two rings. The numerous attached smaller rings at Rollins Shell Ring are unique to that site, and the height of shell deposits at Rollins is much greater than that at Guana. But the similarities are remarkable. Both sites are situated on sea islands, inland from barrier islands protecting them from the Atlantic Ocean. Both had estuaries prehistorically on the

east and west flanks of the islands. Both do not exist in isolation but have extensive Orange middens to their south and north sides. Whether these middens represent villages associated with the rings or whether the rings are village/ceremonial centers independent of the surrounding occupations, or some other variant of settlement remains to be answered.

The similarities between these suggest a common cultural tradition that distinguishes them from other shell ring culture areas. The southwest Florida rings are more elongated U shapes, are associated with mounds, do not contain pottery, and predate Guana and Rollins. The contemporary South Carolina rings are much smaller, often occur in groups, are often completely closed circles, and contain different styles of pottery. The Florida Panhandle and Mississippi rings may not be contemporary, contain little or no pottery or pottery of a different style, and contain exotic artifacts indicative of long distance trade. Of course, none of the other known rings have orientations and pottery similar to that of Guana and Rollins. We are not suggesting Rollins and Guana are manifestations of a single culture. A closer look at the similarities and differences in their material culture is needed before this conclusion can be more definitively reached. But their similarities are suggestive of a close historical connection.

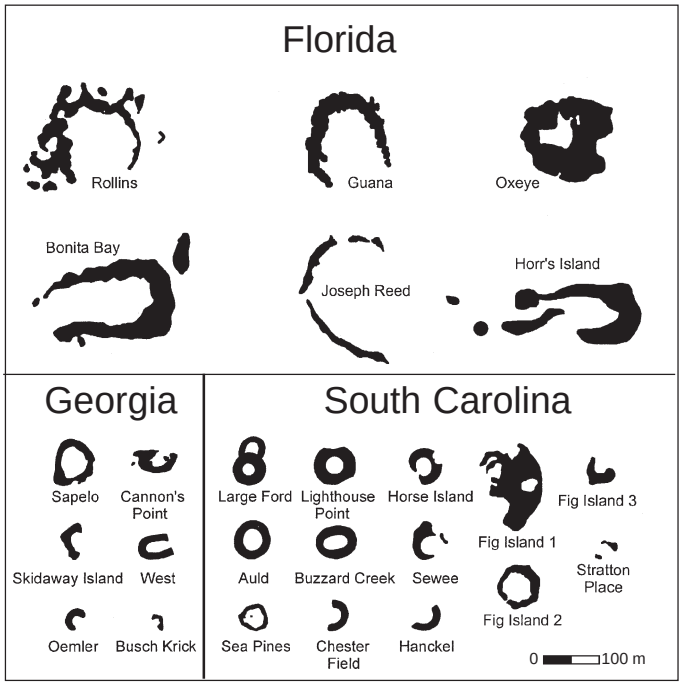

Figure 12 — Sizes and shapes of Archaic shell rings in the Southeastern U.S.

Pottery Distribution at Guana

Elsewhere Russo (1991, 1994, 1999, n.d.; Russo and Heide 2002) has suggested that shell rings in Florida were built and occupied permanently by egalitarian societies on the cusp of becoming more socially complex. He has suggested that evidence of incipient social complexity can be found in the differential distribution of shell at ring sites. Based on worldwide ethnographic evidence as well as well as investigations and theory from social psychology pertaining to circular social environments, (Grøn 1991), he has suggested that those areas with the greatest amounts of shell equate with positions held by individual or sub-group (e.g., kin group) society members with the highest status. These people usually obtain their status through their natural aggrandizing tendencies (Hayden 1995). In a rich environment, such aggrandizers tend to accumulate more food resources and hold feasts with the excess foods being gifted to others. The goal of the gifter is to impose social debt on others in order to receive economic recompense at future social settings. Evidence of feasting abounds at shell rings in the massive, undifferentiated accumulations of shellfish suggestive of large-scale episodic deposits.

One perquisite of hosting feasts and having others socially obligated to the host is that the host obtains favored positions within ceremonial settings. In U-shaped rings, Russo has suggested that the most favored position is at the closed end of the ring. Here the host was situated with equal numbers of ceremonial participants on each side of the ring. Reflective of this high status position, the greatest amounts of shell should be found at the closed end of U-shaped rings. These amounts of shell serve as displays of the host's ability to obtain greater amounts of food and as symbols of the high status position.

According to the theory, other positions in the ring should contain evidence of lower status in the form of lesser amounts of food refuse. Closeness to the high status position is coveted by ceremonial attendees and so those positions closer to that high status seat should contain larger amounts of shell than those positions more distant. That is, the closer one was situated to a host position, the more status, and hence, the more food was received from the host's largess. In shell rings, then, we should expect that the closed end of the ring should have the tallest or otherwise most voluminous (time and gravity in some cases may diminish actual height) amounts of shell, while areas on the arms of the ring should evidence diminishing deposits in direct relation to their increasing distance from the closed end.

Based on topographic maps, such shell distribution seems to be present at C- and U-shaped shell rings in the Southeast (Russo n.d.). Variations do exist, however, both in theory and in practice. Depending on how stratified a society is, within each arm competing factions with their own high status individuals or sub-groups heading them may situate themselves opposite each other with the plaza separating them. Thus each arm of the ring may have associated within it, its own high status positions, usually subordinate to the highest status at the closed end of the ring, but sufficient to warrant greater accumulations of food refuse than other sections along each arm. Theory (Grøn 1991; Russo n.d.) suggests these secondary high status positions may lie along the center of each arm and be evidenced by greater amounts of shell. Thus shell rings may manifest a number of high and low deposits of shell along their circumference and symmetry of shell distribution should not be expected except in those societies which contain members of equal accumulatory abilities, i.e., in only the most egalitarian of societies. Regardless of the exact shape and depth of shell distribution in a shell ring, Russo has suggested that the greater amounts of shell should be viewed as equating with greater aggrandizing efforts and the higher status that accompanies such efforts.

In theory, the distribution of other items, such as pottery, may similarly reflect status at shell rings (Russo n.d.; Russo and Heide 2002). Pottery is often used at ceremonial feasting sites to display and symbolize acquired status in incipiently complex societies (Hayden 1995, 2001). As such, Russo has theorized that greater amounts or more highly decorated or otherwise rarer kinds of pottery may be associated with higher status positions at ring sites. Alternatively, if pottery is not associated with increased status, then its distribution in terms of numbers and styles should be equal throughout the ring.

With this in mind, we looked at the distribution of pottery from our tests at Guana Shell Ring. While samples of pottery were too small from each individual test to draw any conclusions, we hoped that if we combined unit samples into the theoretical status positions along the ring as outlined above, a pattern associated with pottery distribution and status might emerge, if such a pattern existed. The North Ring Units (Table 16) were equated with the theoretically high status positions; the Middle Ring Units (Table 17) stood for the middle status positions; and the South Ring Units (Table 18) equaled low status positions. Overall, the greatest amounts of ceramics came from the high status positions as the model would predict. In terms of both weight and numbers, over twice as many ceramics were recovered from these units as were recovered from the middle units, while the north units held three to four times the amounts as recovered from the south units.

The conclusion is not so neat as it first appears, however. The northern units represented on average four times the volume of shell than that which was excavated from the middle and southern units. One might thus argue, that more was dug, so, of course, more artifacts were recovered. To overcome this bias, the average amount of pottery recovered from each 10-centimeter level of a 50-by-50-centimeter shovel test was compared between the north, middle and south unit groups. This revealed that the middle and south units actually contained more pottery per volume of shell than the north group (on average 26 versus 17 grams per level; Tables 16–18). While at first this might suggest that the south and middle groups may actually have been the ones obtaining more pottery,

we note that many of the south units, particularly those in the eastern arm, contained relatively little shell. So although the rate of pottery recovered in south units may have been slightly higher than that recovered per volume in the north units, these units simply do not have the volume to compete with the north units in terms of the actually amounts of pottery they hold. Overall because of its greater volume, the north part of the site yields more pottery—at least in the eastern arm—than the south part of the site.

Dividing the site between east and west rather than north and south provides an alternative view of the data. As can be seen in Figure 6, the western side of the ring contains considerably more volume of shell than the eastern side. This alone suggest a dichotomy in status at the site similar to that outlined above for competing factions within a ring community. That is, those people who occupied the western arm seem to have been able to accumulate and display more food than those who occupied the eastern arm. In fact, in portions of the western arm shell is nearly as deep as that in the theoretically highest status position at the closed end of the ring (near unit 469N 453E). Over four times the weight of the eastern arm (Table 20) was recovered from the western arm (Table 19).

Again, however, we have the bias of more shell being dug in the western arm (over twice as much) than was excavated in the eastern arm. Even so, if we average the ceramics per volume of excavation, the average weight of ceramics per level is double that recovered from the eastern arm (31.1 versus 14.8 grams). This suggests both that there are far more cultural deposits in the western than in the eastern arms and that more pottery was being utilized in the western arm for every unit volume of shell.

However, we question whether our samples are sufficiently large to draw definitive conclusions about ceramics per volume of shell. Problematic to these comparisons is the assumption that regardless of where a unit is placed, it is considered equally likely of obtaining a representative sample of artifacts from that area of the ring. In fact, we know this assumption to be false. For example, we judgmentally defined the north group as consisting of three units, two shovel tests and the 1-by-2-meter test unit and its column sample. This test and column sample are equivalent in area to nine shovel tests. By essentially placing nine units next to each other, we may have biased recovery when compared to a pattern in which shovel tests were more randomly or evenly distributed as in the east and west arms. The column sample placed next to the 1-by-2-meter unit actually recovered only one-twentieth of the pottery by weight of the unit when, if statistically equal, it should have recovered one-ninth. While these north units yielded more ceramics overall than those recovered from the western arm, this may have been due to the fact that more shell volume was excavated. Taking into account the average weight of ceramics recovered per level, the north units actually yielded less (17.1 versus 31.1 grams). Whether this is due to a real cultural phenomenon or is an artifact of sampling bias is open to question.

Also, we note our division of east from west, and north from middle and south units is arbitrary. If we alter the groupings, different statistics may result. For example, if we take 470N 430E away from the north unit group and place it in the west group, and take 470N 480E away from the north unit group and place it in the east unit group, different statistical trends between the east and west are observed. In terms of grams of ceramics per volume of shell, the east and west are now nearly identical (27.7 grams each, Table 21) while the north units (now consisting solely of the test unit and its column sample) average only 14.3 grams of ceramics. This change in the statistic resulting from the movement of one test unit to a different grouping suggests that our samples simply are too small to draw any definitive conclusions about their distribution relative to shell volume. If anything, there is a slight negative correlation between amount of pottery and amount of shell per volume. That is, the more shell accumulated in a particular area, the less amount of pottery per volume of shell is encountered. Shell accumulated faster than pottery.

In summary, the evidence that people valued the amounts and distribution of shell at the site

can be seen in the correlation of higher mounds of shell at certain theoretically predicted high status points in the ring. The same can be said of pottery. At those points, more pottery is found. That is, the higher the status position, the greater amounts of shell and pottery were deposited. If we assume for the moment that shell was the engine behind production and use of pottery at the site, i.e., that pottery was used to process, serve, hold, display or was otherwise linked to shell, then it is to be expected that increased amounts of pottery should track with greater accumulations of shell.

However, apparently at Guana, the accumulation of pottery went only up to a point. No caches of pottery have been found, and no greater amounts of pottery beyond an equivalent increase in shell have been identified. This suggests that greater quantities of pottery were not status markers, but, rather, epiphenomenon of shell use, or vice versa, of course. However, if it was greater quantities of pottery and not shell that drove the engine of social inequality, then more pottery above and beyond that which is interdependent on shell might be expected to be found at high status positions. This is not the case. While certain areas of the ring with predicted lower status had greater amounts of pottery per unit volume of shell, because these areas had less shell overall, they had less amounts of pottery overall.

But if the *amounts* of pottery and shellfish generally covaried, did the *kinds* of pottery also covary with the amounts of shellfish? Or did different kinds of pottery reflect status independent of shell quantity? By calculating the average numbers of Orange Plain to Orange Incised ceramics recovered among unit groupings (Table 21), a comparative assessment can be made. In the east grouping Orange Plain sherds slightly outnumber Orange Incised sherds. For every gram of Orange Incised pottery, there are 1.8 grams of Orange Plain. In contrast, the north units have relatively more Orange Incised, 2 to 1 over Plain, while the west units have 2.4 grams of Incised sherds to every plain sherd. Because the higher amounts of Orange Incised sherd correlate to areas of higher density of shells, there is the suggestion that decorated pots may have held more status than plain pots at the site. However, we caution that our samples are extremely small and that a better measure of comparison would be Minimum Numbers of Vessels rather than grams of sherds. We note that different groupings of what constitutes north, west and east units (Tables 16, 19, and 20) reveal different ratios. Nonetheless, the trend stays the same, and thus may offer us a future avenue of research in helping to understand the ring community. Was decorated pottery status related?

The data so far collected from the Guana Shell Ring suggest that access to goods was differentially permitted. Some occupants were allowed to accumulate or otherwise receive more shell, more pottery, and possibly different kinds of pottery. However, this unequal access to goods was limited. Greater accumulations of pottery were not allowed by any one individual beyond the point that greater accumulations of shell were allowed. We suggest that this indicates that people could gain higher status at the site, but their efforts were constrained. Evidences of great differences in social status reflective of chiefdom level social organization, for example, simply are not present. Although markers of status were allowed to emerge at the shell ring, social mechanisms to limit the degree of social differentiation were also present. As is known from the ethnographic record, status differences may have emerged only in certain ceremonies. Such ceremonies, we suggest, occurred at the shell ring. However, such status differences were not necessarily permitted outside these specific ceremonial settings. For example, at camps, non-ceremonial villages, or even burial sites, communities with largely egalitarian ethics may not have allowed the use of rituals and materials reflective of status differences.

The society at the Guana Shell Ring might best be described as transegalitarian—a society whose members maintained social relations of equal status (aside from status linked to gender and age), but allowed for status inequalities to emerge in specific social settings, such as ring ceremonies. Whether the status settings observed at the Guana Shell Ring were limited to the ring itself or persisted into other social settings, of course, have yet to be determined.

MANAGEMENT RECOMMENDATIONS

Our project provided a series of maps outlining the site's vertical and horizontal boundaries, along with a list of ceramics and radiocarbon dates, which can be used to support the NRHP nomination. The site is significant not only because it represents a rare and little studied aspect of U.S. prehistory—the rise of social complexity—but because of its excellent state of preservation. Only three limited historic disturbances have impacted the site.

The site is currently well managed. Access to the site by motorized traffic is limited. Pedestrian access involves a long hike. Hunters do cross the site seasonally. Boats do afford access to within 100 meters of the eastern side of the site, allowing easy entry by potential looters. However, no evidence of looting was observed anywhere on the site. The primary human activity on the sites involve an occasional maintenance vehicle, bicyclist or hiker on the dirt road that bisects the site. We do not recommend that this road be moved or access limited. Current traffic patterns do not add to whatever damage has been done to the site by the construction and past usage of the road. We recommend that non-local resources (e.g., stone) be used for maintenance repairs, and that if scraping is needed on the road, archaeological monitoring be conducted during the maintenance.

Looters are aware of the nearby site 8SJ2555 due to Guana Lake draw downs, which expose artifacts along the shore. These opportunistic looters, however, have not ventured further inshore to the shell ring. Surface exposures at the ring are minimal, and any looting would have to involve labor-intensive digging, a disincentive to all but the most inveterate of looters. Also, the kinds of artifacts (mostly potsherds) available at the shell ring are generally not attractive to looters. We recommend that descriptions of the site be published in scientific research journals and more public oriented literature for two reasons. One, we believe the unexciting artifact assemblages which characterize the site will generally have a discouraging affect on potential looters. And, two, the significance of the site will encourage further research and appreciation of the prehistory of the Guana tract by the public.

FUTURE RESEARCH

We did not obtain radiocarbon dates from the upper surfaces of the ring primarily because our tests revealed the possibility of subsequent occupation by cultures more recent than Orange. Due to the small size of our shovel tests, we could never be sure if we were sampling residue from these later, intrusive occupations in the upper surfaces or the last deposits left by the original builders of the ring. Larger excavations will be required to determine when construction ceased at the ring and when subsequent cultures moved in.

Funding precluded faunal analysis, but we do note that most of the ring is composed of oyster shell. Quahogs, or hard clams, are the secondmost abundant resource, but are far outnumbered by oysters. Coquina is episodically present, occasionally in large numbers. The presence of coquina and quahog promises the possibility for determination of seasonality. These and other data can be used to assess whether the site was used throughout the year or only seasonally.

Although our investigations were restricted to the Guana Shell Ring, a walk over the nearby 8SJ2555 site revealed extensive shell middens. The Orange pottery found here suggests that the site may articulate with the Guana Shell Ring. Investigations into the nature of the connection between the two sites is critical to gaining an understanding of the settlement pattern of Orange peoples in the region. Were shell rings ceremonial components of nearby villages or were the centers servicing a wider, regional population?

Research under this grant has resulted in the publication of two papers, which mention the Guana Shell Ring as part of the greater southeastern U.S. prehistoric landscape (Russo and Heide 2001, 2002) and a given paper to a general public audience on the site itself (Russo et al. 2001). Discussion of the site is currently being reviewed for a book chapter on the rise of social complexity in the Southeast (Russo n.d.).

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